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Tobacco

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Tobacco

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AADAC
ALBERTA ALCOHOL AND DRUG ABUSE COMMISSION
AN AGENCY OF THE GOVERNMENT OF ALBERTA

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Quick Facts

- Nicotine is the primary active ingredient in tobacco and is classified as a drug. It is a stimulant and causes heart rate and blood pressure to increase.
- Tobacco can be processed into cigarettes, snuff, chewing tobacco, pipe tobacco or fine-cut tobacco for hand-rolled cigarettes.
- Cigarette smoke contains over 5000 chemicals. 60 of these chemicals have been identified as carcinogens (cancer-causing agents).
- Tar consists of the solid particles found in tobacco smoke. Tar interferes with the normal exchange of oxygen and carbon dioxide in the lungs.
- Direct health care costs attributed to smoking in Canada in 1982 totalled $2.5 billion.
- 30% of all heart disease is caused by smoking.

  33% of all strokes are caused by smoking.

  90-95% of all lung cancer is caused by smoking.
- Most smokers begin as teenagers. Peer influence plays a major role.

  In Alberta, approximately 80% of all teenagers do not smoke.
- After 18 months of non-smoking, the risk of heart attack drops almost to the level of a person who has never smoked.
- Sidestream smoke is the smoke from a burning cigarette that is released into the environment. It contains higher amounts of toxic and cancer-causing chemicals than mainstream smoke (the tobacco smoke inhaled by a smoker).

Researching Tobacco

This booklet is a collection of information about tobacco and tobacco products used in our society. This information has been gathered from a wide variety of authoritative sources. These sources include medical journals, non-fiction books, federal government studies in Canada and the United States, and research conducted by international organizations like the World Health Organization.

The *Facts Folder* on *Tobacco* has been designed to provide you with an overview of the research behind the facts and issues connected to the use of tobacco in our society. When you use it as a resource for assignments, reports and debates, remember that balancing the facts and issues against each other will help you answer the questions or reach informed conclusions about your subject.

What's In A Cigarette?

When tobacco is burned — whether in a cigarette, cigar or pipe — it produces smoke containing over 5000 different chemicals. Sixty of these chemicals are cancer-producing agents called carcinogens. Many others are toxic or combine with other chemicals to form carcinogens. One chemical, carbon monoxide, prevents the blood from carrying as much oxygen as it usually does, forcing the heart to work harder to supply the body with oxygen. Carbon monoxide can stay in the bloodstream up to six hours after smoking one cigarette.

Nicotine is the principal active ingredient in tobacco and is classified as a drug. The primary means of taking this drug into the body is through smoking. Smoking tobacco has been labelled an addiction by the National Institute of Drug Abuse, the U.S. Public Health Service, the World Health Organization, the American Psychiatric Association and the American Public Health Association.

Nicotine addiction is a habit that is hard to break. The more often you smoke, the more nicotine enters the body. Nicotine is a stimulant drug and causes heartbeat and blood pressure to increase.

Tar consists of the solid particles found in cigarette smoke. Tar interferes with the normal exchange of oxygen and carbon dioxide that takes place in the lungs, contributing to shortness of breath and lack of endurance. As smoking continues, tar slowly coats the smoker's lungs. Within a year, a one-pack-a-day smoker inhales about a pound of tar. As tar builds up, the smoker runs a greater risk of developing lung cancer.

Tobacco Products

Tobacco can be processed into cigarettes, snuff, chewing tobacco, pipe tobacco or fine-cut tobacco for hand-rolled cigarettes.

All tobacco products contain many cancer-causing chemicals.

Snuff and chewing tobacco contain these chemicals and are not considered safe alternatives to cigarette smoking. Hand-rolled cigarettes from fine-cut tobacco usually yield higher amounts of tar, nicotine and carbon monoxide than manufactured cigarettes of the same brand name. Tobacco smoke from pipes and cigars is basically the same as the smoke from cigarettes. Since it is usually not inhaled, the harmful chemicals in this smoke most commonly affect the mouth and throat.

Recently, a new form of cigarette has been marketed in Canada — the clove cigarette. These cigarettes contain 30-40% cloves and 60-70% tobacco. They can contain almost twice the tar and nicotine of ordinary cigarettes. These cigarettes have been known to cause allergic and toxic reactions as well as congestion of the lungs, asthma, and chest pains resulting from an insufficient blood supply to the heart (angina). While clove cigarettes have been imported into the United States from Indonesia since 1968, some American states have now begun to outlaw their sale.

Another new tobacco product is the “smokeless cigarette,” a substance spiked with nicotine and tobacco flavoring wrapped in a tube to simulate a standard cigarette. The user puffs on it without ever lighting it. A package of six claims to provide the same amount of nicotine as a pack of 20 conventional cigarettes. This product is promoted as an alternative when smoking would be considered either dangerous or socially unacceptable. However, since the introduction of the “smokeless cigarette” is so recent, at the present time little is known either about its acceptance by smokers or its potential negative health effects.

What Are The Short-Term Effects Of Smoking?

The first time someone smokes a cigarette, the effects are felt almost immediately. Heartbeat and and blood pressure increase, the throat becomes dry and irritated and inhalation of the smoke can cause the person to cough. The beginning smoker may experience dizziness, a very rapid pulse or clammy hands. When the inhaled smoke reaches the lungs, the air tubes (bronchi) and air sac (alveoli) are irritated. The harmful chemicals in cigarette smoke then enter the bloodstream through the lungs. If the person continues to smoke despite these unpleasant physical symptoms, the body quickly adapts and these initial unpleasant symptoms either diminish or become less noticeable to the smoker.

What Are The Long-Term Effects Of Smoking?

Each year, approximately 35,000 Canadians die prematurely from the effects of smoking. Many more live on with crippled and diseased lungs and hearts.

The leading causes of death in Canada are heart disease, stroke and lung cancer. Cigarette smoking has been proven to be a major risk factor in all three.

- 30% of all heart disease is caused by smoking.
- 33% of all strokes are caused by smoking.
- 90-95% of all lung cancers are caused by smoking.

In addition to heart disease, stroke and lung cancer, the long-term effects of smoking include an incurable disease called emphysema (abnormally enlarged lungs), chronic bronchitis (inflammation of the air tubes), and cancers of the larynx (voice box), esophagus, bladder, kidney and pancreas.

Are “Light” Cigarettes Better?

There is considerable evidence to indicate that the actual amounts of tar, nicotine and carbon monoxide inhaled by smokers are substantially higher than the yields claimed by the manufacturers. Research into the “light” or so-called “low-nicotine” cigarette has shown that smokers of these cigarettes may not be consuming less nicotine than smokers of regular cigarettes. Since the leading smoke-related cause of death is heart disease, it is important to note that two recent studies indicate that there is no difference in the risk of heart disease from smoking “light” or “regular” cigarettes.

Health Risks For Female Smokers

Women face the same negative health consequences of smoking that men do — but they face other risks as well. According to the U.S. Surgeon General’s 1984 report, lung cancer has already reached epidemic proportions among women smokers. In Canada, there has been a 300% increase in hospital stays by women being treated for lung cancer in the past 10 years. Female smokers are 13 times more likely to develop cancer of the cervix. Female smokers who also use birth control pills are 40 times more likely to have a stroke or a heart attack.

Teenage Smoking In Alberta

In 1986, the Alberta Alcohol and Drug Abuse Commission conducted a survey among young people, aged 12-17 years old, living in the province. The survey revealed that approximately 80% of all teenagers do not smoke. What this statistic tells us is that the majority of teenagers in Alberta do not see smoking as an acceptable behaviour.

Why Do People Start Smoking?

Most smokers begin to smoke as teenagers. They are usually unaware of the risk they're taking by starting to smoke. Young people often wish to appear sophisticated and mature and, like most adults, are aware only in a general way that smoking is harmful to health. Many see smoking as a way to imitate adult behaviour and demonstrate their independence. Other reasons include peer pressure, curiosity and a willingness to experiment. The easy availability of cigarettes and their cost are also factors in young people becoming smokers.

In 1985, the Canadian Gallup Poll conducted a survey for the Health Promotion Directorate of Health and Welfare Canada. More than half of all young Canadians polled believed that smoking can relieve nervousness. About one-third agreed that smoking can make you feel part of the group and 10% believed that it produces pleasant experiences or relieves shyness.

Why Do People Continue Smoking?

Why people continue smoking is a complex subject. It has been established that 90-95% of smokers would like to quit yet large numbers of people continue to smoke. Many smokers derive a psychological enjoyment from their smoking habit, including the immediate gratification of lighting up whenever they feel the urge. Nicotine dependence is also a powerful factor. Nicotine dependence occurs when the body grows used to nicotine and needs it to feel comfortable.

Research in the United States and around the world has confirmed that the more available tobacco products are, the more likely the smoker is to continue using them. The same research indicates that cost is also a factor in consumption — as the cost of cigarettes increases, the smoker buys and smokes less.

Many smokers smoke to manage negative feelings such as anger, anxiety or stress. Fear of weight gain is also a common reason for continuing to smoke. However, most people do not gain a great deal of weight when they quit.

There are a whole range of activities, called environmental cues, which tend to increase smoking behaviour. Who your friends are and how much alcohol and coffee you drink can be strong factors in continuing to smoke. Smokers tend to associate with other smokers, and everyone tends to smoke more when those around are smoking heavily. If you're smoking and drinking alcohol, the more alcohol you drink, the more cigarettes you're likely to consume. Drinking lots of coffee, talking on the phone, driving, typing or socializing are among the many environmental cues that can be linked in the smoker's mind to lighting up.

What Happens When You Quit Smoking?

Within the first year of stopping, the body's overall energy level increases, circulation improves, lung function increases by up to 30%, ability to taste and smell is enhanced, oxygen and carbon monoxide levels in the blood become normal, blood pressure decreases, coughing, shortness of breath, sinus congestion and fatigue decrease, as does the chance of having a heart attack.

After 18 months of not smoking, the ex-smoker's risk of heart attack drops almost to the level of a person who has never smoked. After five years of not smoking, the lung cancer death rate for the average ex-smoker has been cut by almost half. Within 10 years of stopping, the lung cancer death rate for the average ex-smoker drops to almost that of non-smokers. At this point, the risk of a wide variety of cancers has also decreased dramatically.

Why Do People Stop Smoking?

The two biggest reasons given by smokers who wish to quit are:

- Increasing social unacceptability
- The negative effects of smoke on both themselves and non-smokers.

A number of research studies have shown that the most common trigger for an attempt to quit smoking is something physical — usually an increase in smoking-related symptoms such as coughing and breathlessness, or something very serious like a heart attack. For young people who enjoy athletics and pride themselves on their endurance and competitiveness, the negative effects of smoking on their performance may also prompt an attempt to quit.

How Serious Is The Risk From Passive Smoking?

The 1986 U.S. Surgeon General's report identifies a serious and chronic disease risk to non-smokers from passive or involuntary smoking. There is growing evidence that non-smokers with increased exposure to passive smoking run an increased risk of lung cancer and heart disease.

- Several recent studies have found that, compared with the general population, non-smoking spouses of smokers have two to three times the risk of lung cancer.
- There appears to be a direct relationship between the respiratory health of infants and young children and parental smoking.
- The trend toward smoking so-called "light" cigarettes may actually increase the passive smoking hazard to non-smokers. The "light" cigarette contains as much as one-third more particulate matter and the smoker tends to smoke more of them, thus increasing the volume of sidestream smoke in the air.
- Finally, research from Health and Welfare Canada indicates that about 480 Canadian non-smokers die each year from lung cancer caused by exposure to sidestream smoke.

What Is Sidestream Smoke?

Sidestream smoke is smoke released into the air by a burning cigarette or other tobacco product. Sidestream smoke accounts for about 85% of the tobacco smoke in the environment. The other 15% is made up of second-hand smoke — the tobacco smoke exhaled by the smoker into the environment. Mainstream smoke is the smoke purposely inhaled by the smoker using the tobacco product.

What Is Passive Or Involuntary Smoking?

Passive or involuntary smoking occurs when non-smokers are exposed to sidestream smoke as an unavoidable result of being near smokers in the workplace, in public facilities like restaurants, sports arenas and airports, or at home.

Non-smokers exposed to sidestream tobacco smoke not only smell it, they absorb it into their bodies. Sidestream smoke contains higher concentrations of many of the toxic and cancer-causing chemicals found in mainstream smoke. More than 30 years of research have established that mainstream smoke is a cancer-causing agent. Now that sidestream smoke has been judged even more potent than mainstream smoke, smokers are finding smoking less and less acceptable around non-smokers.

How Much Does Tobacco Use Cost Us?

The following is one estimate of the direct health costs in 1982 due to smoking:

Total Amount of Direct Health Costs Due to Smoking in Canada

Hospital Care (Direct Cost)	$ 1.5 billion
Disability	$ 850 million
Fire Loss	$ 120 million
Medical Care	$ 30 million
Total For 1982	**$ 2.5 billion**

Smoking Trends In Canada

The social acceptability of smoking seems to be at an all time low. In Canada, non-smokers are the majority — about 66% of the population does not smoke. Since the late 1960s, the tobacco industry has been the target of anti-smoking organizations ranging from concerned citizens to professional and medical groups. In 1986, the tobacco industry faced continual criticism. Groups such as the Non-Smoker's Rights Association and Physicians For A Smoke-Free Canada petitioned the government to outlaw cigarette advertising completely — not just on television. 1986 also saw the first smoke-free airline schedules — for trips under two hours — and growing pressure to restrict smoking in the workplace, schools and hospitals.

Smoking And Controversy

The *Facts Folder* on *Tobacco* has examined the research connected to the use of tobacco in our society. From this research we know:

- 66% of the population does not smoke.
- Sidestream smoke contains higher concentrations of many toxic and cancer-causing chemicals than mainstream smoke.
- More and more people are objecting to smoking in public places such as banks, airplanes, hospitals and schools.

Given the fact that the majority of the population does not smoke and the fact that sidestream smoke is rated even more harmful than smoking cigarettes, the emerging trend of people objecting to smoking in public places is sure to continue as an area of controversy and debate in our society.

Glossary

Addiction: When the body grows used to the presence of a drug and needs it to feel comfortable. The dependence can be physical, psychological or both.

Cancer: A disease marked by large, often fatal tumors and the ability of the disease to move from the original site and invade other parts of the body.

Carcinogen: A substance or chemical agent that produces cancer.

Chronic: Habitual or frequently recurring.

Epidemic: Affecting many individuals within a population.

Nicotine: The principal active ingredient in tobacco.

Second-hand smoke: The smoke exhaled into the environment by a smoker.

Sidestream smoke: The smoke released into the environment by a burning cigarette.

Stroke: When an artery in the brain is ruptured or obstructed by a blood clot causing sudden lessening or complete loss of consciousness, sensation and voluntary motion.

For Further Information

For further information on this topic, contact your school or public library or your local AADAC office (look under Alberta Alcohol and Drug Abuse Commission in the phone book).

AADAC

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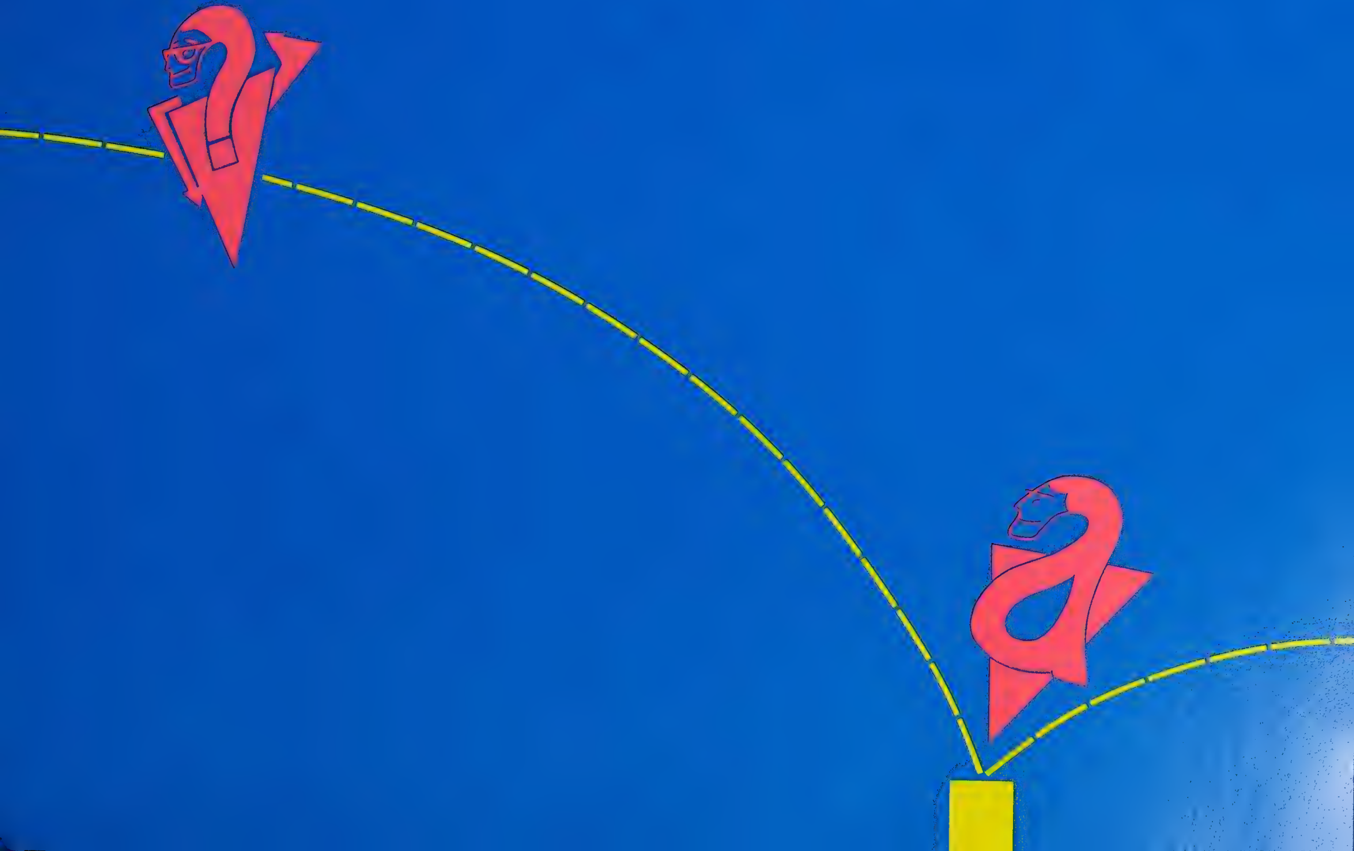
Marihuana



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Marihuana

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Quick Facts

- Marihuana is a plant whose botanical name is *Cannabis sativa*. This plant can be processed into marihuana, hashish or hashish oil.
- The major active chemical ingredient in marihuana is THC, Tetrahydrocannabinol.
- Medically, marihuana is usually classified under the category of psychedelics and hallucinogens (mood- or mind-altering drugs). However, in different doses it can act either as a stimulant, depressant or hallucinogen.
- Approximately one-quarter of all 12-18 year olds in Canada have tried marihuana at least once.
- Approximately 87% of teens (12-17) in Alberta do not use marihuana.
- Marihuana has short-term effects on the nervous system and alters mood, perception, sensation and motivation.
- Marihuana can impair short-term memory, verbal fluency, calculation skills, time sense, physical coordination, and the ability to follow complex directions or focus visual attention.
- Marihuana can impair two skills that are necessary to the safe operation of a motor vehicle: physical coordination and visual concentration.
- The three most serious charges under the Narcotic Control Act are trafficking (selling), possession for the purpose of trafficking, and importing or exporting (transporting marihuana across the Canadian border).

Researching Marihuana

This booklet is a collection of information about marihuana and marihuana use in our society. The information has been gathered from a wide variety of authoritative sources. These sources include medical and scientific journals, federal government studies in Canada and the United States, and research conducted under the joint efforts of alcohol and drug abuse research agencies and international bodies like the World Health Organization.

The *Facts Folder* on *Marihuana* has been designed to provide you with an overview of the research behind the facts and issues connected to the use and penalties for use of marihuana in our society. When you use it as a resource for assignments, debates and reports, remember that balancing the facts and issues against each other will help you answer the questions or reach informed conclusions about your subject.

Section 1

What Is Marihuana?

Marihuana is a plant whose botanical name is *Cannabis sativa*. The cannabis plant can be processed into either marihuana, hashish or hash oil. The major active chemical ingredient in marihuana is THC (Tetrahydrocannabinol). THC can acutely affect the nervous system and alter a user's perceptions, moods and sensations.

Marihuana Use In Alberta

A 1986 survey of teenage drug use in Alberta conducted by AADAC revealed the following key fact about current marihuana use by teenagers, aged 12-17, in the province:

- 87% of teens in this age group had not smoked marihuana in the past six months.

The Medical Classification Of Marihuana

Marihuana is usually classified under the general medical category of psychedelics and hallucinogens (mood- or mind-altering drugs). However, in different doses it can act either as a stimulant, depressant or hallucinogen. The dominant characteristic shared by the drugs grouped under psychedelics and hallucinogens is their ability to alter the user's perceptions, mood, and sensations.

Marihuana Use In Canada

The growth, sale, possession and use of marihuana is restricted by the Narcotic Control Act. In 1985, the Canadian Gallup Poll conducted a survey among Canadian students and young people aged 12-29 for the Health Promotion Directorate of Health and Welfare Canada. Here are some facts related to marihuana use across Canada:

- Approximately one-quarter of all 12-to-18-year-olds have tried marihuana at least once.
- Marihuana users are much more likely to have consumed alcohol and smoked cigarettes than non-users of marihuana.
- The largest number of regular marihuana users are in the age groups 18-19 and 20-24.

Why Do People Use Marihuana?

According to the most recent research survey among young people across Canada, marihuana has a reputation for providing certain benefits to the user. It is perceived as a substance that provides pleasant experiences, helps you feel part of the group, reduces shyness and relieves nervousness. However, marihuana's reputation for helping you feel both a part of the group and less shy appears to be more a result of non-user's misconceptions about it than its real effects on the people who actually use it.

Short-Term Effects Of Marihuana

As you learned earlier, marihuana is categorized as a mood- or mind-altering drug. It has short-term effects on users in three major areas. It affects the functioning of the user's nervous system.It affects the user's psychological functioning. And it affects the user's cardiovascular system. A 1985 report for AADAC, which surveyed all the recent research on marihuana, revealed the following facts.

The Nervous System

As a mind-altering drug, marihuana has short-term effects on the nervous system . The range of these effects is extremely variable, from a feeling of well-being (that might include being more talkative and friendly) to feelings of confusion, tiredness, worry and even fear. The marihuana "high" is strongly influenced by the mood of the user and the situation in which the drug is taken.

Marihuana can affect the user's intellectual functions. Use has been shown to impair short-term memory, the ability to speak clearly, calculation skills, even the sense of time. For example working through a fraction becomes very difficult. Do you invert the fraction and then multiply or do you multiply and then invert the fraction? Research continues to explore marihuana's effects on intellectual performance. At this point, the studies tend to indicate that marihuana use can impair learning ability and interfere with school performance and productivity.

Studies of marihuana's short-term effects on the nervous system also show strong evidence of impairment to both physical coordination and visual concentration. These two effects — a decreased ability to focus your eyes combined with impaired use of arms and legs — can create a significant danger to any user who tries to drive while under the influence of the drug. These skills are precisely those required in the safe operation of automobiles and other motor vehicles.

Psychological Functioning

The mind-altering effects of marihuana can produce some negative reactions. These can range from feeling mildly anxious to, in rare instances, delirium. Anxiety or panic reactions and paranoid states can occur; an inexperienced user feels "out of control" and begins to panic. These feelings are usually short-term. In very rare cases psychological reactions can include severe disorientation and extreme panic. However, these reactions also usually last only a few hours and disappear when the drug is discontinued.

The Cardiovascular System

Marihuana use increases the heart rate in most people. This fact has been repeatedly demonstrated since the earliest research into the short-term effects of marihuana on humans.

Marihuana's effects on blood pressure are much more variable and much less consistent than its effects on heart rate. What is clear is that marihuana interferes with the automatic reflexes that usually maintain blood pressure. These reflexes come into play when a person suddenly changes position — from lying down to standing up — or when a person suffers a significant loss of blood. When the blood pressure is not adjusted by these automatic reflexes, the marihuana user can experience dizziness, fainting or even shock.

While it has been proven that marihuana does increase the user's heart rate and influence automatic reflexes that maintain blood pressure, marihuana's short-term effects are unlikely to be harmful to healthy young people. However, to older persons and to individuals with heart disease, high blood pressure or an increased likelihood of stroke, the use of cannabis can be a potentially serious risk.

Section II

Marihuana And Controversy

Section I summarized the research about the short-term effects of marihuana and marihuana use. Section II will give you an overview of the areas in which controversy exists or in which more research is required before accurate conclusions can be drawn.

The controversy about marihuana has been around for a long time. At the turn of the century marihuana was generally regarded as a "killer weed" that turned people into "raving maniacs". In 1944, at the request of the Mayor of New York City, the medical, chemical, psychological and social aspects of marihuana were studied but very little came of the research.

In the late 1960s, marihuana again became the object of research, which has continued to the present day. Medical investigation however has been hampered by the fact that the drug is illegal and therefore long-term tracking of users is difficult to accomplish.

Legal controversy stems from the fact that there are groups of people in our society who believe that the possession or cultivation of marihuana for strictly personal use should not be regarded as a criminal act. They consider the current legal treatment of these types of offenders either wrong, ineffective or short-sighted. However, alternative solutions to current penalties for these "personal use" offenders, are also proving to be controversial.

Medical Issues: Are There Long-Term Effects?

The question is: are there long-term effects from marihuana use? The complete answer is, as yet, unknown. Certain things are clear, however. Serious long-term effects of marihuana use are, likely, a consequence of chronic, or habitual, use. However, research-sized populations of chronic marihuana users are not easily found, particularly in North America.

Much of the research into marihuana's long-term effects is, therefore, based upon studies of research subjects from countries (the Far East, India and the West Indies) in which the use of the drug is widespread and access to habitual users is somewhat easier. However, even after collecting the appropriate research subjects, investigators are faced with the problem of tracking them over long periods of time in order to determine the exact nature of marihuana's long-term effects. Finally, there is the possibility that the climate, diet and culture in these areas will affect any conclusions.

These stumbling blocks affect all research into marihuana's long-term effects, and particularly investigations into the nervous system, genetics, and the immune system. Let's take a look at the three key areas in which research is continuing: the nervous system, psychological functioning, and the respiratory system.

The Nervous System

Whether chronic (habitual) use of marihuana results in lasting effects on memory and other aspects of intellectual functioning is an issue still under investigation. There are not that many studies in existence and most are based upon research populations from the Third-World areas mentioned above. Most studies have not discovered a significant difference between non-users and habitual users. Nor has heavy marihuana use been proven to cause brain damage, as was suggested in the early 1970s following a British research project that was later cited for sloppy techniques and conclusion.

Psychological Functioning

A 1983 report for the Addiction Research Foundation in Ontario and for the World Health Organization, found substantial evidence that at least a mild degree of both psychological and physical dependence can occur with regular marihuana use. Research conducted during the 1970s has revealed that for people who have a history of emotional problems, mental illness or previous drug-induced "bad trips," marihuana may prove a special hazard. Habitual use can precipitate or worsen the symptoms of mental illness or emotional problems.

The Respiratory System

Because marihuana is typically smoked, its effects on the lungs and respiratory system are of particular concern. Marihuana smoke contains many of the same irritants found in tobacco smoke, including some cancer-causing chemicals. Current research indicates that a combination of tobacco and marihuana, smoked together, has a stronger potential to produce cancer than either substance does alone.

Since deep, sustained inhalation is the method used to smoke marihuana, research studies have been investigating what adverse effects marihuana may have on the lungs, especially as a potential cause of lung cancer and chronic lung diseases.

While there is evidence that chronic marihuana smoking can cause the sinuses and bronchial tubes to become persistently inflamed, there is still no conclusive proof that marihuana will cause lung cancer. No instance of lung cancer has yet been attributable solely to marihuana use. But an Addiction Research Foundation/World Health Organization report predicts that the next 30 years will see an increase in lung diseases and lung cancers that will be the direct result of smoking marihuana.

What the current, although incomplete, evidence points to is that chronic marihuana smoking produces lung damage similar to that resulting from heavy cigarette smoking.

What Is The Current Law?

Under the laws of Canada, the possession, use, cultivation and trafficking of marihuana are illegal. Since these are criminal offences, no matter what the outcome of the charge, the result is a criminal record for the offender. Under the Narcotic Control Act, an individual can be charged under five specific categories:

- possession
- trafficking
- possession for the purpose of trafficking
- cultivation
- importing or exporting

The three most serious charges are trafficking (selling), possession for the purpose of trafficking, and importing or exporting (transporting marihuana across the Canadian border). While cultivation (growing marihuana plants) on a large scale is regarded seriously by the courts, both cultivation and possession of marihuana for strictly personal use are rarely punished to the full extent of the penalties available under the Narcotic Control Act.

Other Areas Of Concern

Research continues on the long-term effects of marihuana on the male and female reproductive systems and genetics.

Chronic marihuana use causes decreased sperm counts in males and probably causes abnormal menstrual cycles in females. As with any drug, the effects of marihuana's use during pregnancy is of great concern. While there is no concrete evidence that ties marihuana to birth defects, given the many unknowns concerning its possible effects on the human fetus, the use of marihuana during pregnancy should be avoided.

Studies into the effects of marihuana on human genetics have *not* confirmed early reports of abnormal cell structure and chromosomal "breaks" resulting from marihuana use. However, the question of marihuana's long-term effects on human genetics remains unanswered, and research in this complex area continues.

Legal Issues

At present, marihuana use is controlled under a federal statute, the Narcotic Control Act, and offences against this Act are considered to be criminal offences. This is a source of controversy since some people in our society believe that the personal possession and personal use of marihuana is simply not a serious enough offence to justify the time and money spent enforcing these charges under the Narcotic Control Act.

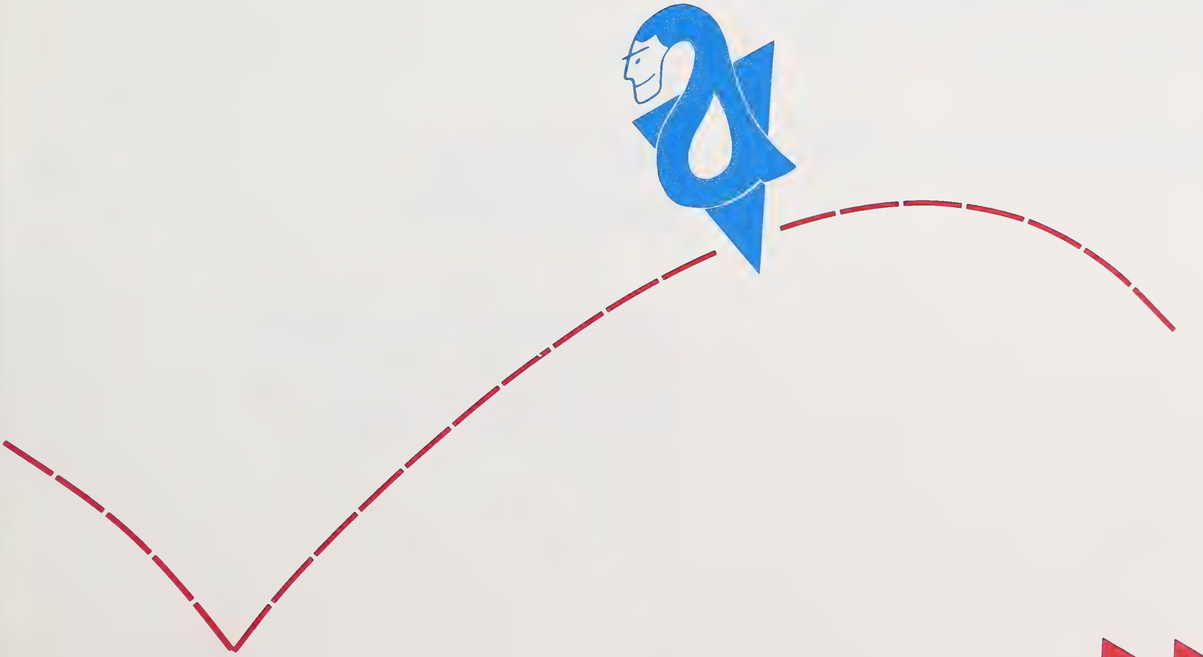
As well, some people believe that the harmful consequences of having a criminal record because of marihuana possession, wind up being a separate and "continuing" punishment to the individual. An example of this continuing punishment is the fact that a criminal record can seriously limit job opportunities for the rest of the person's life.

What Are The Legal Alternatives?

There appear to be several options open to society concerning marihuana and the law:

- *Leave the situation exactly as it is today.* Marihuana would remain an illegal drug under the Narcotic Control Act, with use, possession, cultivation and trafficking being considered as criminal offences.
- *Depenalization.* Marihuana would retain a similar legal status but convicted offenders would be given less severe penalties.
- *Decriminalization.* Marihuana would be removed from the Narcotic Control Act. Possession would still be illegal but no criminal record would result from conviction.
- *Legalization.* Marihuana would become available on the open market with the government collecting taxes and controlling potency and content. Alternatively, it might be only available through the government, in the same fashion as alcohol.

Whether or not marihuana is "decriminalized," "depenalized" or even legalized in the future, the fact remains that, today in Canada, its possession and use is a criminal offence. Marihuana is a drug governed by the Narcotic Control Act and there are many Canadians who believe it should remain so. While many people may consider using marihuana to be little or no different than using alcohol, the fact remains that the legal consequences of using marihuana or hashish can be severe.



Glossary

Cardiovascular system: The body system associated with the circulation of blood, including the heart and blood vessels.

Chromosome: Anyone of the threadlike structures in the centre of a cell that carries genetic information.

Chronic: Long-term, habitual or frequently recurring.

Cultivation of marihuana: Growing marihuana plants.

Delirium: A disordered state of mind with incoherent speech, hallucinations, and frenzied excitement.

Genetics: The science that studies the principles and mechanics of heredity, or the means by which traits are passed from parents to offsprings.

Nervous system: A system of nerve cells that transmit information to the brain and instructions from the brain to other organs and body systems.

Paranoid: A mental state characterized by suspiciousness, distrustfulness, feelings of persecution or grandeur.

Possession of marihuana: Marihuana or traces of marihuana found on your person or in your home, car, or amongst your personal property.

Possession for the purpose of trafficking: An amount of marihuana that would not normally be used by one person found on your person, or in your home, car or amongst your personal property.

Respiratory system: The body system associated with bringing oxygen from the air to the blood and carbon dioxide from the blood to the air.

Trafficking of marihuana: Selling, delivering, transporting, mailing, distributing or giving away marihuana.

For Further Information

For further information on this topic, contact your school or public library or your local AADAC office (look under Alberta Alcohol and Drug Abuse Commission in the phone book).

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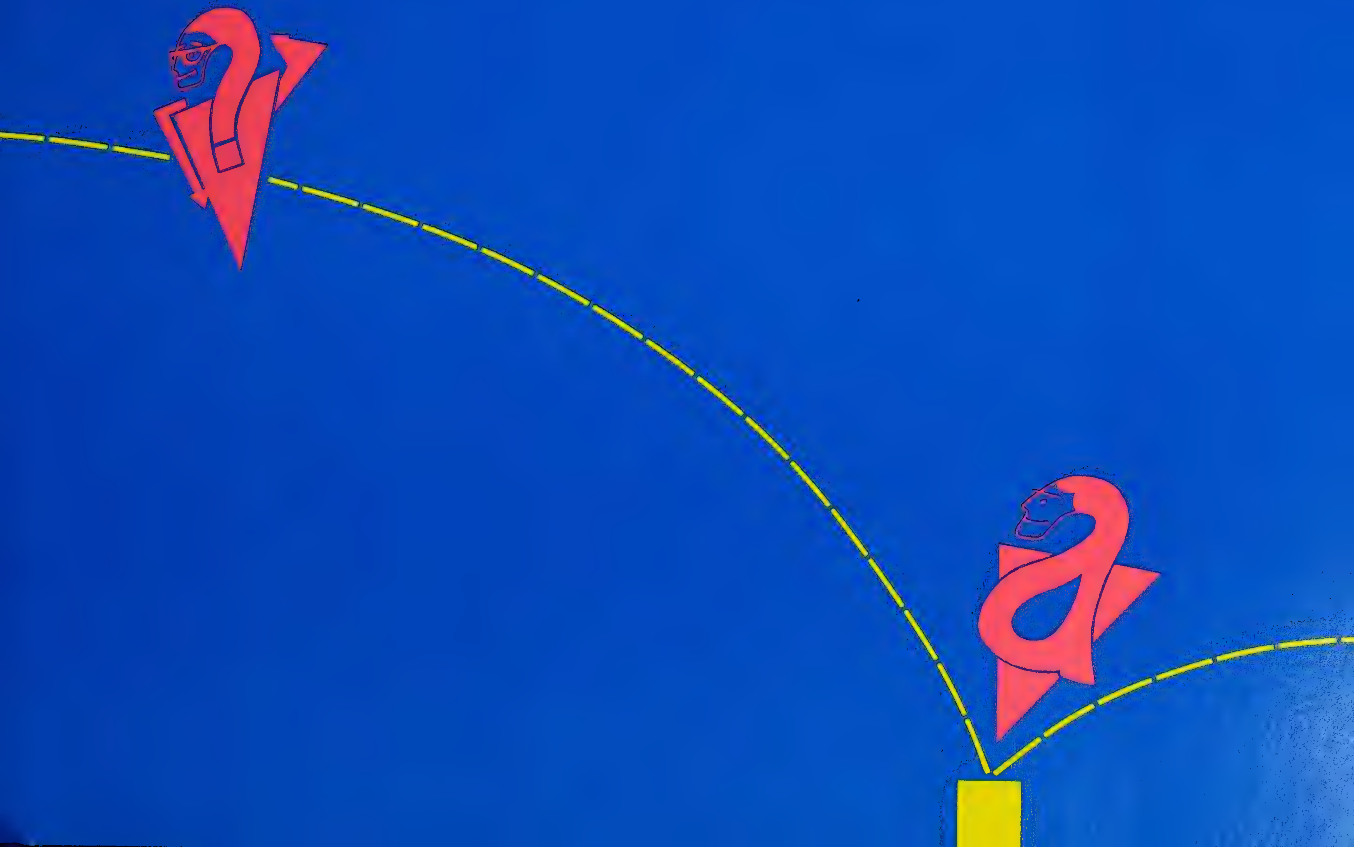
Facts Folder

Alcohol



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Alcohol

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AADAC
ALBERTA ALCOHOL AND DRUG ABUSE COMMISSION
AN AGENCY OF THE GOVERNMENT OF ALBERTA

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Quick Facts

- Records show that beer and domestic wine were in use in Ancient Egypt as early as 4000 B.C.
- Alcohol comes in three basic forms: wine, beer and distilled spirits.
- A 355 mL (12 oz.) bottle of beer, a 44 mL (1½ oz.) shot of distilled spirits and 148 mL (5 oz.) of table wine contain the same amount of ethyl (beverage) alcohol — 17mL (0.6 oz.).
- Pure alcohol contains joules (calories) but no vitamins or minerals.
- The legal limit for a Blood Alcohol Concentration is .08 or 80 mg of alcohol per 100 mL of blood.
- The effects of alcohol can vary from person to person and depend on mood, weight, stomach contents, speed of drinking and type of alcohol consumed.
- Black coffee does not sober you up. An intoxicated person drinking black coffee will only become a wide awake intoxicated person.
- Alcohol is eliminated from the body at a fixed rate of about 10 mL per hour.
- Alcohol needs no digestion and is absorbed directly through the walls of the stomach and small intestine into the bloodstream.

Researching Alcohol

This booklet is a collection of information about alcohol and its effect on the human body. This information has been gathered from a wide variety of authoritative sources. These sources include medical and scientific journals, federal and provincial government studies in Canada and the United States, and research conducted by alcohol and drug abuse research agencies.

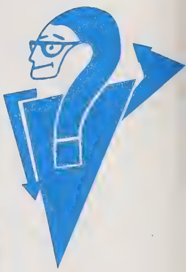
The *Facts Folder* on *Alcohol* has been designed to provide you with an overview of the research behind the facts connected to the use of alcohol in our society. When you use this booklet as a resource for assignments, debates or reports, remember that balancing the facts against each other will help you answer questions or reach informed conclusions about the subject.

Section I

What Is Alcohol?

Alcohol has been part of our society since the earliest times. Records show that beer and domestic wine were in use in Ancient Egypt as early as 4000 B.C. From that time to the present, alcohol has been used as a beverage, as medicine, even as a "magic fluid". The word "alcohol" comes from the Arabic "al kohl" which, loosely translated, means "the essence".

Today ethyl or "beverage" alcohol is one of the world's most widely used drugs. It comes in three basic forms: beer, wine and distilled spirits or "hard liquor". A 355 mL (12 oz.) bottle of beer contains about the same amount of alcohol as a 44 mL (1½ oz.) shot of distilled spirits, 148 mL (5 oz.) of table wine or 89 mL (3 oz.) of fortified wine (sherry, port etc.). Each of these contains approximately 17 mL (0.6 oz.) of pure alcohol. For the purposes of this booklet this is considered one "drink".



What Happens To Alcohol In The Body?

Once alcohol reaches the stomach most of it is rapidly absorbed into the bloodstream. However, if there is food in the stomach, the absorption is slowed down. Alcohol that is not absorbed in the stomach is passed into the small intestine. There absorption is also very rapid. Once the alcohol is absorbed into the bloodstream, it spreads throughout the body, reaching the brain almost immediately.

The liver is the organ which breaks down or "metabolizes" alcohol. It does this slowly and at a constant rate. This constant rate is unique to the metabolism of alcohol. A 150 lb. man would break down pure alcohol at an *average* rate of 10 mL in one hour. So a bottle of beer would take about one-and-a-half hours since it contains about 17 mL (0.6 oz.) of pure alcohol. Current information indicates that a carbonated alcoholic beverage (such as champagne) is not absorbed more quickly nor does drinking through a straw lead to a quicker, more intense intoxication.

Alcohol does contain joules (calories): one bottle of beer has about 630 joules (150 calories), but these are joules with no real food value. They contain almost no vitamins, minerals or other essential substances.

What Are The Short-Term Effects Of Alcohol?

The short-term effects of alcohol on the body depend on how much alcohol you have in your bloodstream — the "Blood Alcohol Concentration" or "BAC". So the first question is how much has been drunk and what sort of drink has it been — beer, wine, distilled spirits or fortified wine. (Alcohol in more dilute drinks is generally absorbed into the bloodstream more slowly while beer can exert a retarding action on alcohol absorption similar to that of food.) The next question would be how long has the drinking been going on, since this will determine how much alcohol has been absorbed and metabolized.

For example, a 125 lb. male is drinking beer. If he drank one bottle in one hour he'd be feeling quite relaxed, probably laughing and joking. If he drank two bottles in one hour he'd be feeling a bit giddy, his judgement would be slower and his coordination a bit faulty. At this point he would probably have a BAC of approximately .05%, so driving a car or operating machinery would become increasingly dangerous. One more drink would put him over the legal limit — .08% (80 mg of alcohol per 100 mL of blood).

.08	Definite impairment of muscle coordination and driving skills; *legally drunk in Alberta.*
.1	Clear deterioration of reaction time and control.
.12	Vomiting occurs, unless this level is reached slowly.
.15	Balance and movement are impaired.
.3	Many people lose consciousness.
.4	Most people lose consciousness; some die.
.45	Breathing stops; death.

One other physical effect of alcohol that may be experienced is a feeling of warmth. Blood vessels in the skin tend to dilate, giving the skin a flushed appearance. Although warmth is felt, the actual effect is a *loss of heat*. For that reason alcohol should be avoided in situations of extreme cold.

What Is A Hangover?

"Hangover" is the common term for the after-effects of excessive drinking. Hangovers are usually experienced after sleep has occurred and may be characterized by nausea, headache, fatigue, dizziness, poor coordination, heartburn and general aches and pains.

What Are The Long-Term Effects Of Alcohol?

Moderate or occasional use of alcohol by a healthy person is unlikely to produce health problems. However long-term or chronic *abuse* of alcohol can result in many serious and even life-threatening effects. These can occur either from the direct toxic effects of alcohol or secondary causes such as malnutrition or exposure.

Nervous System

Chronic use of alcohol will first of all lead to **Tolerance**. This means that more and more alcohol is needed to achieve the same effect. The brain and central nervous system become less sensitive to the effects of alcohol. After long-term exposure the body becomes capable of metabolizing alcohol more rapidly. The result is that more alcohol must be consumed to reach and keep the desired effect.

Dependence occurs when the body gets used to having alcohol in the system. When alcohol is withdrawn then ***Withdrawal Symptoms*** occur: these may include loss of appetite, nausea, anxiety, sleeplessness, irritability, confusion, sweating and tremors. In severe cases the symptoms can include convulsions, cramps and hallucinations. In many respects withdrawal from alcohol is more hazardous than withdrawal from heroin.

DT's (Delirium Tremens) are the most severe form of withdrawal symptoms and can occur during withdrawal from heavy consumption. Severe agitation, confusion and disorientation are common as well as high body temperatures and accelerated heart rate. Controlled withdrawal under supervision reduces the likelihood of experiencing these effects.

Effects On The Brain are often a consequence of chronic alcohol use. Changes can be observed in both personality and behaviour. Alcohol affects certain areas of the brain which control memory, motor functions (such as walking) and a general awareness of surroundings.

Continued heavy drinking over a period of years can lead to what are called ***Organic Brain Disorders***. They are a much more severe form of impairment. Those afflicted are confused most of the time, memory is uncertain and fragmented, and walking becomes a slow, broad-based lurch.

Blackouts, the inability to remember events after a period of drinking, are often used as material for jokes. However blackouts are the result of the effect of alcohol on the central nervous system and are considered an early warning sign of alcohol problems. Blackouts tend to become more frequent with continued alcohol abuse.

Other Physical Effects

Gastrointestinal effects from chronic alcohol use can result in ulcers, pancreatitis and liver diseases such as cirrhosis.

Malnutrition and associated diseases occur because heavy alcohol users often lose interest in food because of stomach problems. In addition, alcoholic beverages contain almost no nutrients.

Heart Damage is also caused by chronic alcohol use as well as an increased risk of contracting infectious diseases such as pneumonia and tuberculosis.

Cancer is another danger associated with chronic alcohol use. Cancer of the mouth, pharynx, larynx, and esophagus has been definitely associated with chronic alcohol use. More recent studies indicate that alcohol may also play a role in cancers of the liver, pancreas, stomach, large intestine, rectum and breast.

How Else Can Alcohol Affect Your Life?

In addition to damaging physical or mental health, alcohol can cause increasing problems in other areas. These include:

- *Relationships with family and friends.* For example a feeling of isolation complicated by arguments over alcohol use.
- *Job Or School.* Missing work or school because of a hangover or losing a job as a result of alcohol use.
- *Financial.* Going into debt to gain money for alcohol or to provide support after losing a job.
- *Legal.* Possibly facing an impaired driving charge.
- *Emotional.* Experiencing anxiety, guilt or depression over alcohol use.

The risk of cancers associated with the mouth area (pharynx, larynx, esophagus) is increased when alcohol is combined with tobacco use. For example, as reported in the *Fifth Special Report to the U.S. Congress from the Secretary of Health and Human Services* in 1983, alcohol consumption and heavy smoking produces up to fifteen times the risk of cancer of the mouth when compared with people who neither smoke nor drink. Heavy smoking alone increases the risk only two to three times.

Fetal Alcohol Syndrome (FAS) is another consequence of chronic alcohol use. Alcohol crosses the placental membrane and can affect the development of the fetus. Newborn babies suffering from FAS may have abnormal facial features and mental retardation. FAS is present in an estimated 30-40% of newborns whose mothers drink heavily.

Section II

Why Do People Start Drinking?

Young people often take their first drink because they wish to appear sophisticated and mature. Many see having a drink as a way to imitate adult behaviour and demonstrate their independence. Other reasons include peer pressure, curiosity and a willingness to experiment.

Why Do People Continue Drinking?

After that "first drink", that may be taken at a celebration or with a group of friends, most Canadians become what is known as *social drinkers* that is, people who drink alcoholic beverages without problems.

For most people alcoholic beverages are used to help feel relaxed, to stimulate appetite or even to quench thirst, for example the beer on a hot weekend. For some people, however, having a drink plays an increasingly important part in their lives, and they begin to abuse alcohol.

Today more attention is being paid to what degree alcohol is a part of our lifestyle and, in particular its cost in terms of medical care, insurance rates, and the judicial system as well as its effect on personal relationships, finances and career.

What Is Alcoholism?

In the past, alcoholism was considered a sign of "moral weakness". In the late 1940's, however, it was suggested that alcoholism could be classified as a chronic, progressive disease — and therefore a condition that could be treated.

Today, alcoholism can be defined as "an ongoing, inappropriate use of alcohol which causes increasingly more serious problems in a person's physical or mental health, work, family or social life."

What Causes Someone To Become An Alcoholic?

Anyone who drinks *may* become an alcoholic. However it is not possible to predict who *will* become an alcoholic.

One view is that alcoholism is not *a single phenomenon*, but a *wide range of conditions*. This approach suggests that alcohol use and abuse may depend on personality, upbringing and experience as well as genetic and bio-chemical factors.

Another possible factor is lifestyle. Someone who depends on alcohol to relax them at the end of a "hard day", or who needs a drink to prepare them for a big meeting, could develop a problem with alcohol.

Can Alcoholism Be Treated?

Yes, alcoholism can be successfully treated. AADAC has approximately 30 treatment clinics throughout Alberta. Both in-patient and out-patient programs involve individual and family counselling, group therapy, lectures, films and recreational activities.

Clearly, there is a need for continued public education in the use and abuse of alcohol as well as further study of the effects of alcohol on the body.

Glossary

Cancer: A disease marked by large, often fatal tumors and the ability of the disease to move from the original site and invade other parts of the body.

Chronic: Long-term, habitual or frequently recurring.

Gastrointestinal: relating to the stomach, intestines and digestive organs.

Joule: A unit of energy (4.2 joules = 1 calorie)

mg: Milligram. A measurement of mass and weight.

mL: Millilitre. A measurement of volume.

Nervous System: A system of nerve cells which transmit information to the brain and instructions from the brain to other organs and body systems.

For Further Information

For further information on this topic, contact your school or public library or your local AADAC office (look under Alberta Alcohol and Drug Abuse Commission in the phone book).

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Alcohol Statistics

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Alcohol Statistics

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ALBERTA ALCOHOL AND DRUG ABUSE COMMISSION
AN AGENCY OF THE GOVERNMENT OF ALBERTA

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Quick Facts

- In 1985, 25.9% of all fatal driving accidents in Alberta involved drinking drivers.
- Teenage drinking in Alberta has declined since 1981. In Alberta, statistics suggest that in the 20-plus age bracket, there are twice as many men as women who are alcoholics.
- In 1984, alcohol sales in Alberta totalled $857 million.
- The sale of alcohol in Alberta decreased slightly from 1983 to 1984.
- In 1984-85, Alberta ranked fourth in Canada in the consumption of absolute alcohol in beer, wine and spirits.
- In 1982, an estimated 550,000 Canadians were alcoholics.
- In Alberta people are having fewer drinks per week per person. In 1979-80 the figure was 15.0. In 1984-85 the figure had decreased to 13.2 drinks per person per week.
- In 1982, 2,385 Canadians died from cirrhosis of the liver, including 225 Albertans.

Researching Alcohol Statistics

This booklet is a collection of statistical information about alcohol. The information has been gathered from authoritative sources. These sources include federal and provincial government studies in Canada and research conducted by alcohol and drug abuse research agencies.

The *Facts Folder* on *Alcohol Statistics* has been designed to provide you with an overview of the figures associated with alcohol usage. When you use this booklet as a resource for assignments, debates and reports, remember that balancing facts against each other will help you answer questions or reach informed conclusions about the subject.

Important Note

Many of the statistics in this folder are based on the use of "absolute alcohol" (pure alcohol). The term is used for statistical purposes in order to determine use, consumption, etc. without having to consider the amount of water, sugar and other additives found in alcoholic beverages.

What Do Statistics Tell Us?

Suppose that we wanted to know how many 15-year-old girls in Alberta have red hair. We could go out and count every red-haired girl in the province, but it would take too long and by the time the job was done so many redheads would have moved into and out of the province that the figure would be wrong. Statistics provide a much easier method.

First, we need to develop a *sample group*. This group will represent all the 15-year-old girls in Alberta. Thus, we have to decide how large a sample group is necessary to *statistically represent* all the 15-year-old girls in Alberta. For the purposes of this example, let us say that we already know that there are 100,000 15-year-old girls in Alberta. So we make our sample group 1,000. It only remains to count how many redheads there are in that sample group.

Each red-head becomes a "statistic". If there are 20 redheads in our sample group of 1,000 15-year-old girls then "statistically speaking" 2% of the group is red-haired. This means that among 100,000 15-year-old girls in the province, we can expect that 2% (or 2,000) will be red-haired. While the answer can't be absolutely accurate it will be close enough.

What Are Statistics?

Statistics are numbers. These numbers can represent percentages. For example, if 85 out of every 100 people love chocolate then 85% of the population are chocolate-lovers. Statistical numbers can also represent comparisons. For example, if 50 boys out of every 100 play video games but only 25 girls out of every 100 play video games then, statistically, twice as many boys play video games as girls.

From the point of view of those people who collect and work with statistics, all of us are a statistic in one way or another. We either belong to a certain group (15-year-old student) or a sub-group (15-year-old student of Ukrainian heritage) or a sub-sub group or a sub-sub-sub group — the categories are endless. Whenever something happens to us we become another statistic: If the headline in the paper reads "15-year-old Wins Million-Dollar Lottery," then that teenager has just become a statistic. And, if anyone in the future wanted to know what percentage of the Alberta population was both 15 years old and a millionaire, then this statistic would help to supply the answer.

What Do Statistics Show About Teen Drinking In Alberta?

Teenage drinking in Alberta has declined since 1981. In 1981, 55% of the teenagers questioned about drinking said they had consumed alcohol more than three times and had more than one drink in the past six months. By 1986 the figure of 55% had dropped to 46%.

What Are The Figures Regarding Alcoholics In Alberta?

It is important to remember that the following figures are estimates only. According to 1982 figures, there is an estimated total of 50,800 alcoholics in Alberta. This estimate is calculated from the number of deaths from cirrhosis of the liver, a disease usually caused by alcohol abuse and a commonly used indicator of alcoholism.

In *Table 1*, it can be seen that the total figure can be broken down to 35,500 men and 15,300 women. This is close to a two-to-one ratio, and means that in Alberta it is estimated there are twice as many men who are alcoholics as women.

Table 1

Number Of Alcoholics 1982*

	Men	Women	Total
Ontario	139,850	65,150	205,000
Quebec	94,450	43,050	137,500
B.C.	53,700	31,600	85,300
Alberta	35,500	15,300	50,800
Manitoba	15,050	9,450	24,500
Saskatchewan	11,650	5,550	17,200
Nova Scotia	7,700	4,850	12,550
New Brunswick	7,350	3,400	10,750
Newfoundland	2,950	2,000	4,950
P.E.I.	750	650	1,400
Total Canada	**368,950**	**181,000**	**549,950**

* Data selected from M.Adrian and P.Jull, *Statistics on Alcohol and Drug Abuse in Canada and Other Countries - Vol. 1: Statistics on Alcohol Use,* courtesy of the Alcoholism and Drug Addiction Research Foundation, Toronto, Ontario, January 1987.

What Are The Figures For Alcohol Consumption In Alberta?

In 1984-85, Alberta ranked fourth in Canada in the consumption of beer, wine and spirits. *(See Table 2.)*

A look at *Diagram 1* shows that a total of 20,844.2 litres of absolute alcohol was consumed in Alberta.

If we look at the statistics for how many alcoholic beverages Albertans 15 years old and over consumed each week *(see Table 3)*, then we find that the figure is 13.2 drinks in 1984-85. Compare this with 1979-80 and we see that the amount has decreased — from 15.0 drinks in 1979-80 to 13.2 drinks in 1984-85.

Further study of *Table 3* reveals that a decrease can also be seen across the rest of Canada between 1979-80 and 1984-85. Statistics therefore show us that Canadians are having fewer drinks per week per person.

The figures in *Table 3* represent an average and have been calculated by pooling statistical information from *all* Canadians over 15 years of age. Naturally, a percentage of people in the population drink less or do not drink at all.

Table 2

Consumption Of Absolute Alcohol In Beer, Wine And Spirits (In Thousands Of Litres) 1984-85*

	Beer
Ontario	38,290.4
Quebec	27,953.8
B.C.	11,563.2
Alberta	8,814.0
Manitoba	4,413.0
Saskatchewan	3,416.6
Nova Scotia	3,234.8
New Brunswick	2,613.2
Newfoundland	2,551.2
P.E.I.	455.4
N.W.T.	207.7
Yukon	158.8
Total (Canada)	**103,672.2**

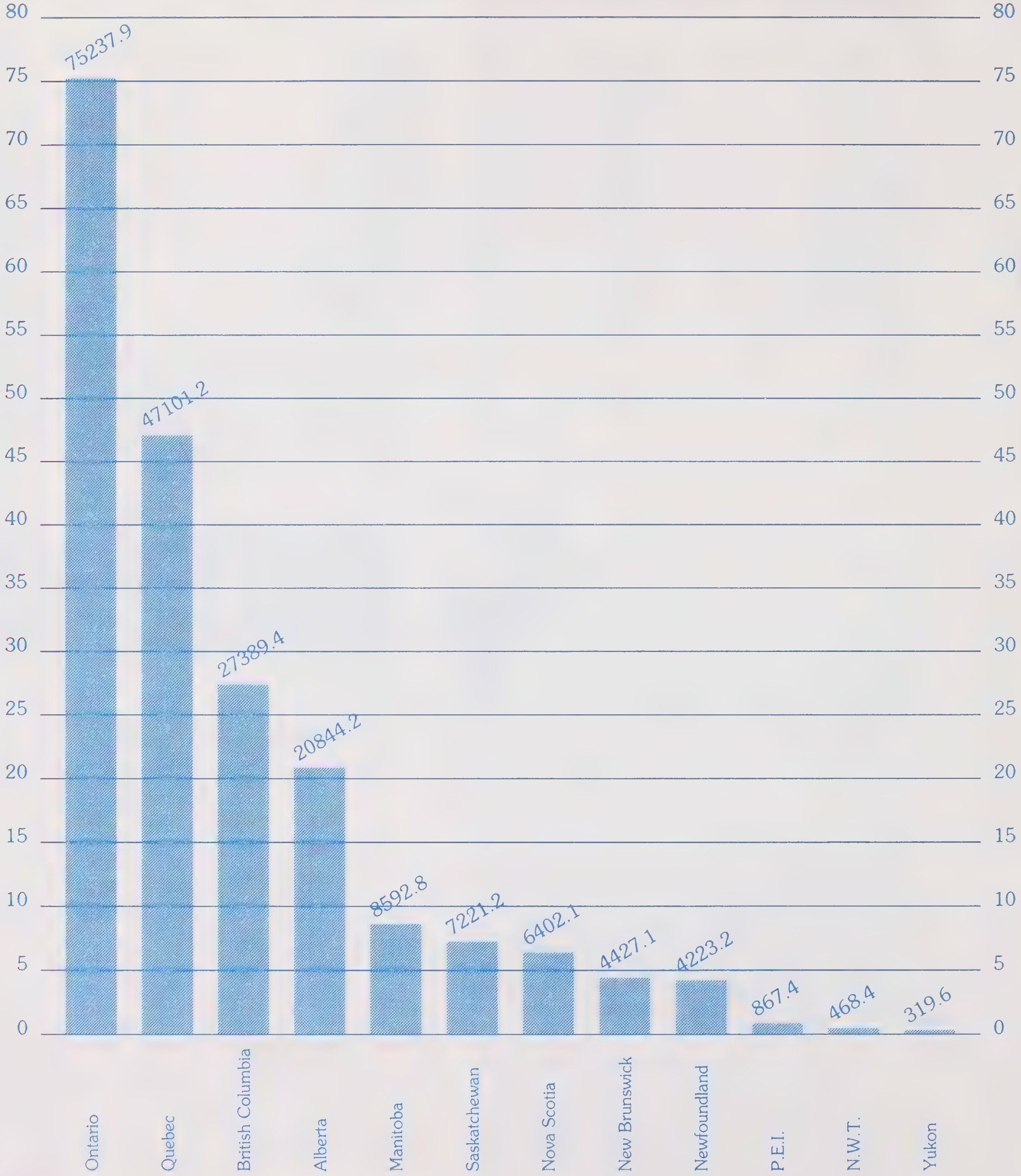
	Spirits
Ontario	25,910.8
Quebec	10,235.6
B.C.	9,812.8
Alberta	9,103.2
Manitoba	3,253.6
Saskatchewan	3,124.4
Nova Scotia	2,472.8
Newfoundland	1,460.4
New Brunswick	1,395.6
P.E.I.	867.4
N.W.T.	468.4
Yukon	114.8
Total (Canada)	**67,447.2**

	Wine
Ontario	11,036.7
Quebec	8,911.8
B.C.	6,013.4
Alberta	2,927.0
Manitoba	926.2
Nova Scotia	694.5
Saskatchewan	680.2
New Brunswick	418.3
Newfoundland	211.6
P.E.I.	68.4
Yukon	46.0
N.W.T.	41.1
Total (Canada)	**31,975.2**

* Data selected from M.Adrian and P.Jull, *Statistics on Alcohol and Drug Abuse in Canada and Other Countries - Vol. 1: Statistics on Alcohol Use,* courtesy of the Alcoholism and Drug Addiction Research Foundation, Toronto, Ontario, January 1987.

Diagram 1

▭ Total Consumption Of Absolute Alcohol By Province (In Thousands Of Litres) 1984-85*



* Data selected from M.Adrian and P.Jull, *Statistics on Alcohol and Drug Abuse in Canada and Other Countries - Vol. 1: Statistics on Alcohol Use,* courtesy of the Alcoholism and Drug Addiction Research Foundation, Toronto, Ontario, January 1987.

Table 3

Consumption Of Alcoholic Beverages Per Week, Per Person*

	1979-80		1984-85
British Columbia	15.1	British Columbia	13.6
Alberta	15.0	Alberta	13.2
Ontario	13.0	Ontario	12.0
Newfoundland	12.8	Manitoba	11.8
Manitoba	12.5	Newfoundland	11.3
P.E.I.	12.0	Saskatchewan	10.7
Nova Scotia	11.7	Nova Scotia	10.6
Saskatchewan	11.6	Quebec	10.3
Quebec	11.1	P.E.I.	10.2
New Brunswick	10.6	New Brunswick	9.2

* Data selected from M. Adrian and P. Jull, *Statistics on Alcohol and Drug Abuse in Canada and Other Countries - Vol. 1: Statistics on Alcohol Use,* courtesy of the Alcoholism and Drug Addiction Research Foundation, Toronto, Ontario, January 1987.

How Many Alcohol-Related Deaths Occur In Alberta?

The question of how many alcohol-related deaths occur in Alberta is a difficult one to answer. First of all, there are a number of forms of alcohol-related death. Two of the most commonly reported are: death from alcohol abuse (these figures may be low since there is often a reluctance to mention alcohol abuse as a cause of death); and death caused as the result of using alcohol (for example, drinking and driving). Statistics, however, are able to supply a reasonably close estimate that can be used as an answer to the question.

Table 4 provides us with statistics that have been reached by considering deaths due to cirrhosis of the liver — a disease usually caused by alcohol abuse.

Table 4

Deaths From Liver Cirrhosis 1982*

Ontario	893
Quebec	580
British Columbia	367
Alberta	225
Manitoba	116
Saskatchewan	68
Nova Scotia	57
New Brunswick	51
Newfoundland	21
P.E.I.	7
Total (Canada)	**2,385**

* Data selected from M. Adrian and P. Jull, *Statistics on Alcohol and Drug Abuse in Canada and Other Countries - Vol. 1: Statistics on Alcohol Use*, courtesy of the Alcoholism and Drug Addiction Research Foundation, Toronto, Ontario, January 1987.

The statistics in *Table 4* show us that in 1982, a total of 2,385 deaths in Canada could be traced to cirrhosis of the liver. Although Ontario has a particularly large number of deaths — 893 — it should be remembered that Ontario has the largest provincial population in Canada.

Another commonly reported cause of alcohol-related death is a fatal traffic accident in which the driver of a motor vehicle has consumed alcohol. In 1985, 25.9% of all drivers involved in fatal driving accidents in Alberta were judged to have consumed alcohol. It should be noted that the fact the driver had been drinking before the accident may not have been the direct cause of the accident.

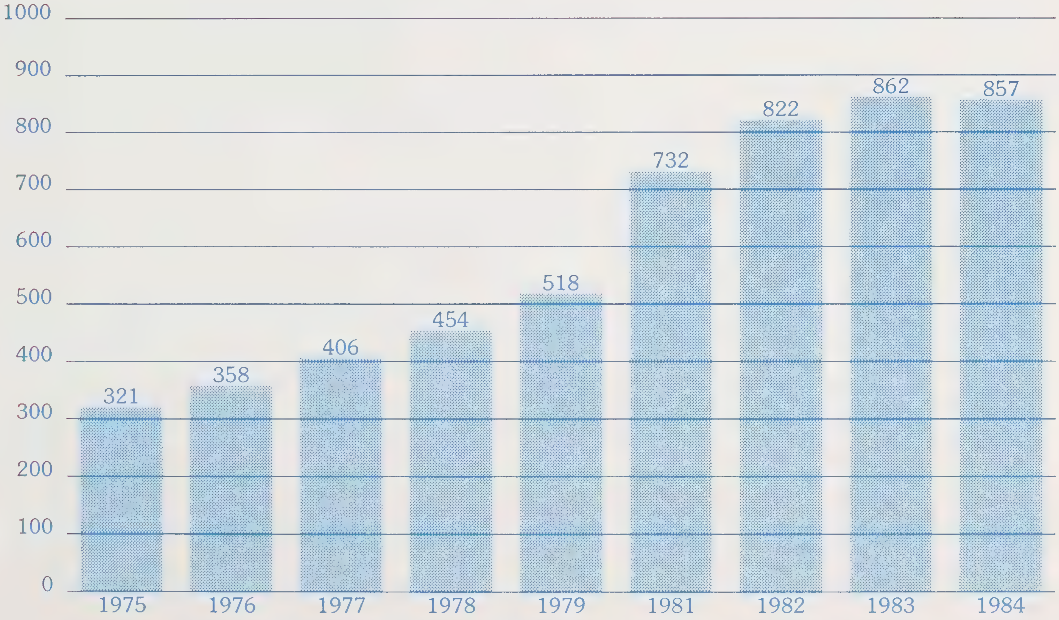
How Much Is Spent On Alcohol In Alberta?

- In 1984 alcohol sales in Alberta totalled $857 million. Just over one-fourth of this total came from sales to licensees such as hotels and lounges.

- It is estimated that the average adult (over 18) Albertan spent $510 in 1984 on alcohol. As you can see in *Diagram 2*, the sale of alcohol in Alberta has decreased from 1983 to 1984.

Diagram 2

Sale Of Alcohol In Alberta (In $ Millions)*



* Data selected from Alberta Liquor Control Board Annual Reports 1975-1984. (Note: resulting from a change in the ALCB fiscal year, 1980's consumption figures represented only nine months and have been excluded).

For Further Information

For further information on this topic, contact your school or public library or your local AADAC office (look under Alberta Alcohol and Drug Abuse Commission in the phone book).

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Alcohol & Driving

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Facts Folder

Alcohol & Driving

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Quick Facts

- Drinking-and-driving offences and penalties are governed under the Criminal Code in Canada.
- In addition to the penalties imposed under the Criminal Code, there are provincial penalties and conditions imposed on the offender under the Alberta Motor Vehicles Act.
- You need not be driving to be charged. An intoxicated driver found asleep in a parked car can be charged with a criminal offence.
- On Friday and Saturday nights in North America, it is estimated that as many as 20% of drivers have been drinking and 10% are impaired.
- For teenagers, 16 and under, more fatal car accidents occur on Friday than any other day of the week.
- When you drink alcohol it is absorbed directly from your stomach and intestine into your bloodstream. A person who has just eaten absorbs alcohol more slowly than someone who hasn't eaten for several hours.
- The amount of alcohol circulating in your blood is your Blood Alcohol Concentration (BAC).
- In Alberta in 1985, one-quarter of all drivers involved in fatal crashes had been drinking.
- In Alberta in 1985, 12% of all drivers involved in serious injury crashes had been drinking.
- 95% of Canadian teenagers aged 12-17 believe that it is dangerous to combine alcohol and driving or riding.
- 88% of Canadian teenagers aged 12-17 believe alcohol affects reaction time.

Researching Alcohol And Driving

This booklet is a collection of information about drinking and driving. This information has been gathered from a wide variety of authoritative sources. These sources include medical and scientific journals, federal government studies in Canada and the United States, and research conducted by both national and provincial alcohol and drug abuse agencies.

The *Facts Folder* on *Alcohol and Driving* has been designed to provide you with an overview of the research behind the facts and issues connected to the use of alcohol and the rights and responsibilities of operating a motor vehicle in our society. When you use this booklet as a resource for assignments, debates or reports, remember that balancing the facts and issues against each other will help you answer the questions or reach informed conclusions about your subject.

Collision Statistics For Alberta

Traffic accidents that result in fatalities or serious injuries are called casualty collisions. The *1985 Alberta Traffic Collision Statistics* report of the Transportation Safety Branch of the Alberta government, revealed the following facts:

- One-quarter of all drivers involved in fatal crashes had been drinking.
- 12% of all drivers involved in serious injury crashes had been drinking.
- There were approximately six times more male drivers than female drivers involved in collisions involving drinking.
- Male drivers 18-19 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

Teenage Casualties

Nationally, motor vehicle accidents are the leading cause of death for teenagers. Alcohol and excess speed are the two key factors. But teenagers aren't the only group at risk from drinking-driving accidents. Research confirms that the largest single criminal cause of death in Canada is drinking and driving. It has been estimated that on Friday and Saturday nights in North America, as many as 20% of drivers have been drinking and an estimated 10% are impaired. Short of staying off the roads completely, it is impossible to avoid the risks posed by drinking drivers.

Indeed, for teenagers aged 16 and under, Fridays are the most dangerous day of the week. Many teenagers look to Friday night as a chance to go to a party, out on a date, hang out with friends, or catch a ride to a movie in town. More fatal car accidents occur on Friday for teenagers 16 and under than on any other day. Statistics for weekends — Saturday and Sunday — are nearly as high.

Teenage Attitudes

Research conducted in 1985 by the Canadian Gallup Poll for Health and Welfare Canada has shown:

- 95% of teenagers polled (aged 12-17) believed that it was dangerous to combine alcohol and driving or riding.
- 88% believed that alcohol affects reaction time.

These statistics indicate that the vast majority of young people across Canada appear to be well aware of the dangers of drinking and driving or drinking and riding.

Drinking-And-Driving Laws

Drinking-and-driving offences are governed under the Criminal Code in Canada. Conviction for a drinking-and-driving offence results in a criminal record. In 1985 amendments to the Criminal Code reformed the penalty provisions under Canada's drinking-and-driving legislation. These amendments are known as c.19 — short for Chapter 19 of the Statutes of Canada — and represent a rigorous policy on impaired driving. c.19 makes it illegal to operate any type of motor vehicle, boat or aircraft while impaired by alcohol or drugs. It brings increased fines and long jail terms.

This legislation regarding impaired drivers, now in effect under c.19, is in part due to public concern about drinking and driving.

Offences Under The Criminal Code

Just what happens when you've been drinking and you're stopped by a police officer?

1. You will have been stopped if a police officer has reason to believe that you might be impaired. This could be because your driving pattern in general indicates impairment.
2. The officer will look for physical signs of impairment such as alcohol on the breath or glassy eyes.
3. If one is available, you will be tested with an ALERT unit (Alcohol Level Evaluation Road Tester), a device that will indicate "Pass", "Warning" (meaning a 24-hour licence suspension) or "Fail". There are also manual tests such as walking a straight line or touching your nose.
4. If the reading is "Fail" (or if you fail your manual tests), you will be taken to the nearest police station for a full breathalyser test. Two samples are taken. These will reveal the precise level of impairment. You will then be charged and issued with an appearance notice — the date of your appearance in court.

You can be charged with a criminal offence if you are driving or have the care and control of a motor vehicle at the same time that you have a quantity of alcohol or drugs in your blood.

Drinking-and-driving offences that do not involve injury or death are:

- Driving while impaired by alcohol or drugs.
- Operating a motor vehicle while blood alcohol content is over .08%.
- Failing to provide a breath or blood sample.

Drinking-and-driving offences under the Criminal Code that do involve injury or death are:

- Impaired driving causing bodily harm.
- Impaired driving causing death.
- Criminal negligence causing bodily harm.
- Manslaughter and criminal negligence causing death.

Minimum Penalties Under The Criminal Code

If you are under 18 years of age and arrested on a drinking-and-driving offence, you will be charged under the Young Offender's Act. If convicted, a judge could fine you up to $1000, order you to do community work, prohibit you from driving, put you on probation or place you in custody.

If you are 18 or older and are convicted on an impaired driving charge, you can be fined, sent to jail or prohibited from driving for a specified period. The minimum penalties under c.19 are:

- First Conviction: a fine of $300 or more and prohibition from driving for three months or longer. In Alberta this is now a minimum six months.
- Second Conviction: 14 days in jail or longer and prohibition from driving for six months or longer.
- Third And Later Convictions: 90 days in jail and prohibition from driving for one year or longer.

Maximum Penalties Under The Criminal Code

When impaired driving results in an accident that injures or kills people and if the impaired driver survives the crash, he or she is subject to tough maximum penalties under c.19. These penalties are:

- Impaired driving causing bodily harm: up to 10 years in prison and up to a 10-year prohibition from driving.
- Impaired driving causing death: up to 14 years in prison and up to a 10-year prohibition from driving.
- Criminal negligence causing bodily harm: up to 10 years in prison and up to a 10-year prohibition from driving.
- Manslaughter and criminal negligence causing death: up to life in prison and up to a lifetime prohibition from driving.

Penalties Under The Alberta Motor Vehicles Act

In addition to the penalties under the Criminal Code, there are provincial penalties and conditions imposed on the offender under the Alberta Motor Vehicles Act. Some of these are:

- A minimum six-month (maximum 36-month) licence suspension.
- A licence reinstatement fee of $125.00.
- First offenders must attend a one-day Alberta Impaired Drivers Course.
- Repeat offenders must attend a weekend-long program called IMPACT which helps repeat offenders assess their alcohol or drug use problem.

Where Can Drinking-And-Driving Offences Occur?

Many people assume that they must actually be driving a car on a public road to be charged with a drinking-and-driving offence. This is not true. These offences can occur anywhere, on public or private land, and in connection with any kind of motorized vehicle, or a boat or plane. And you do not need to actually be driving to be charged, so long as you could be judged to have the "care or control" of the vehicle. An intoxicated driver found asleep in a parked car can be charged, as can an intoxicated driver who approaches his or her vehicle, keys in hand, prepared to drive.

“The Legal Limit Is .08 Or 8.0 Or Something Like That”

The legal limit for alcohol concentration in your blood is .08. It means you have more than 80 mg of alcohol in your system per 100 mL of blood. Be aware that if your Blood Alcohol Concentration (BAC) is ***below*** .08 you can also be charged with being impaired. The following are some examples of the effects of different BAC’s:

.02	Light and moderate drinkers begin to feel some effects. This is the approximate BAC reached after one drink.
.04	Most people begin to feel relaxed.
.06	Judgement is somewhat impaired; people are less able to make rational decisions about their capabilities (e.g. to drive).
.08	There is definite impairment of muscle coordination and driving skills; *legally drunk in Alberta.*
.1	There is clear deterioration of reaction time and control.
.12	Vomiting occurs, unless this level is reached slowly.
.15	Balance and movement are impaired.
.3	Many people lose consciousness.
.4	Most people lose consciousness; some die.
.45	Breathing stops; death.

Blood Alcohol Concentration

Blood Alcohol Concentration (BAC) is the amount of alcohol circulating in your bloodstream. It is a measure of the degree to which you are impaired. The Criminal Code says you must not drive when your abilities are impaired by alcohol or drugs.

What happens to each alcoholic drink you consume? Research has shown that the alcohol is absorbed directly from your stomach and intestine into your bloodstream. Your bloodstream circulates the alcohol throughout your body. Alcohol’s effect on your whole body occurs very rapidly although your brain is affected most quickly. Before the alcohol you have consumed loses its effect on you, it will have to be metabolized — chemically broken down. Your liver is the organ that metabolizes, or breaks down, alcohol. In general, it takes the liver a little more than one hour to metabolize a standard drink such as one bottle of beer, one glass of wine or a single shot of hard liquor.

If, for instance, you drink two bottles of beer in one hour, your liver can break down most of the alcohol from the first drink but the alcohol from the second continues to circulate in your blood, affecting your brain, physical coordination and internal organs. Two people drinking exactly the same amount of alcohol can have quite different Blood Alcohol Concentration readings. A larger, more muscular person will have a lower BAC than a smaller person. A person who has just eaten will absorb alcohol more slowly than someone who hasn’t eaten for several hours.

Legal Drinking Age In Canada

- Four provinces in Canada have set the legal drinking age at 18. They are: Alberta, Manitoba, Quebec and Prince Edward Island.
- Six provinces in Canada have set the legal drinking age at 19. They are: British Columbia, Saskatchewan, Ontario, New Brunswick, Nova Scotia and Newfoundland. The Northwest Territories and the Yukon also have 19 as the legal drinking age.

Sobering Up

Research studies indicate that drinking coffee, taking a cold shower or going for a walk have no direct impact on reducing the concentration of alcohol in your bloodstream. What these supposed remedies have in common is that it takes time to do each one of them. And time is exactly what your liver needs. The reduction of alcohol in your bloodstream and the lessening of symptoms of intoxication depend entirely on your liver's ability to chemically break down, or metabolize, the alcohol you've consumed.

Since the liver is usually able to break down one standard drink in a little more than one hour, the only way to sober up is to stop drinking and give the liver enough time to metabolize the drinks you've already consumed. A person who has consumed three drinks will need more than three hours to pass before the effects of the alcohol have "worn off." A cold shower, a cup of coffee or some fresh air may help you to feel more awake and alert — *but they can never help you become more sober.*

Drinking, Driving And Controversy

The combination of drinking and driving is called the "alcohol-crash problem". It is a problem that would seem to have a simple answer — simply separate the two activities. But that simple answer is causing a great deal of controversy. No one denies that it is the answer; the argument is about the best way to put it into effect.

There are a number of citizens groups (e.g. PAID, MADD, SADD) actively working to reduce the incidence of drinking and driving. Conferences have been organized and task forces have been created to review the "alcohol-crash problem" and to recommend a course of action.

Literally hundreds of approaches have been suggested to separate drinking and driving. These have included:

- ***Educational Approach:*** making the public more aware of the damage that drinking and driving causes to lives and property.
- ***Legal Approach:*** increasing the penalties for drinking and driving, raising the drinking age, and making the use of seatbelts mandatory.
- ***Technological Approach:*** providing vehicles with more safety devices such as airbags, extra tail-lights, stronger bodies.
- ***Health Approach:*** rehabilitation programs for convicted impaired drivers such as the Alberta Impaired Drivers Course and IMPACT.
- ***Social Approach:*** shifting the way people *think* about drinking and driving. One example of this approach is through community-based initiatives such as the Red Deer Challenge organized by the Red Deer Optimist Club.

So far none of these approaches have proven to be completely satisfactory as an answer to the problem. They have been tried either singly or together in many areas and they have achieved degrees of success. They have not, however, been completely successful.

Conclusion

We live in a society that currently promotes the use of both the automobile and alcohol. As a society we may recognize the dangers of combining the two but as individuals it appears that the lesson is only slowly being learned.

What is becoming clearer is that the solution to the "alcohol-crash problem" may not lie in one *single* approach but rather in a *range* of initiatives. These would include legal, educational, health, social *and* technological. In other words while nothing may work by itself, in combination with other approaches it may be just what is needed.

Glossary

Blood Alcohol Concentration (BAC): The amount of alcohol circulating in your bloodstream.

Care and Control of a Vehicle: any act involving the use of a motor vehicle, its fittings or equipment.

Casualty collisions: traffic accidents that result in fatalities or serious injuries.

Criminal Code: laws in effect throughout Canada that define crimes and their penalties.

Impaired: operating or having the care and control of a motor vehicle while under the influence of alcohol or drugs.

Legal limit: a Blood Alcohol Concentration (BAC) in excess of .08%.

MADD: Mothers Against Drunk Drivers — one of a number of citizens' groups and organizations actively working to reduce impaired driving.

PAID: People Against Drunk Drivers. See MADD.

Standard drink: one bottle of beer, or one glass of wine, or one shot of hard liquor.

SADD: Students Against Drunk Drivers. See MADD.

.08 BAC: 80 mg of alcohol in your bloodstream for every 100 mL of blood.

For Further Information

For further information on this topic, contact your school or public library of your local AADAC office (look under Alberta Alcohol and Drug Abuse Commission in the phone book).

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